

## METHODS AND COMPOSITIONS OF MATTER CONCERNING APRIL, BCMA, AGP-3, AND TACI

### Abstract of the invention

5           This invention concerns interactions among APRIL/G70, AGP-  
3/BLYS, BCMA, and TACI and related methods of use and compositions  
of matter. It has been found that (1) sAPRIL/G70 binds to the cell-surface  
receptors BCMA and TACI on T and B lymphoma cells, resulting in  
stimulation of proliferation of primary human and mouse B and T cells  
10 both in vitro and in vivo; (2) APRIL competes with AGP3's binding to  
TACI and BCMA; (3) sBCMA inhibits APRIL and AGP3 binding to its  
receptors; (4) sBCMA ameliorates T cell dependent and T cell independent  
humoral immune responses in vivo; (5) sTACI inhibits APRIL and AGP3  
binding to its receptors and ameliorates T cell dependent and T cell  
15 independent humoral immune responses in vivo; and (6) BCMA exhibits  
similarity with TACI within a single cysteine rich domain located N-  
terminal to a potential transmembrane domain. These discoveries  
provides a strategy for development of therapeutics for treatment of  
autoimmune diseases, and cancer, for prevention of transplant rejection.  
20 Disease states and disease parameters associated with APRIL and AGP-3  
may be affected by modulation of BCMA or TACI; disease states and  
parameters associated with TACI can be affected by modulation of APRIL;  
disease states and parameters can be affected by modulation of any of  
TACI, BCMA, APRIL and AGP-3 by a single therapeutic agent or two or  
25 more therapeutic agents together.